

REMARKS

Claims 1, 3-11 and 13-23 are pending. Claims 2, 12, and 44-70 are temporarily withdrawn as being directed to a non-elected species, but pursuant to PTO rules will automatically re-enter the application should generic claims be allowed.

I. Rejections Over the Prior Art:

In responding to the Examiner's prior art rejections, Applicant here only justifies the patentability of the pending independent claims (1 and 11). As the Examiner will appreciate, should these independent claims be patentable over the prior art, narrower dependent claims would also necessarily be patentable. Accordingly, Applicant does not separately discuss the patentability of the dependent claims, although it reserves the right to do so at a later time if necessary.

Claims 1 and 11 have been rejected as obvious (35 U.S.C. § 103) by USP 6,538,734 ("Powell").

Claims 1 and 11

Claims 1 and 11 both recite a "plasma chamber" coupleable to (claim 1) or coupled to (claim 11) a "processing chamber." The Examiner correctly appreciates that the claimed "processing chamber" corresponds to Powell's "reaction chamber 101" (Fig. 1), and that the claimed "plasma chamber" corresponds to Powell's "excitation chamber 105."

Claims 1 and 11 both also recite that the "plasma chamber" has "at least one reference gas input port for receiving at least one reference gas." Thus, to anticipate, Powell's "excitation chamber 105" would need to have "at least one reference gas input port for receiving at least one reference gas."

But, contrary to the Examiner's understanding, Powell does not disclose this limitation. Instead, Powell discloses the introduction of a reference gas into his "reaction chamber," i.e., akin to the claimed "processing chamber." Powell does not disclose "at least one reference gas inlet port for receiving at least one reference gas" to his "excitation chamber," i.e. akin to the claimed "plasma chamber."

The relevant section of Powell's written description comprises the text accompanying Figure 10. This text, quoted below, is clear that Powell discloses and suggests only the introduction of a reference gas into his reaction chamber 101, and not directly into the excitation chamber 105:

FIG. 10 depicts a process in which a reference gas is used to determine quantitatively the amount of fluorine in an exhaust stream. The peaks analyzed were fluorine at 704 nm and argon at 750 nm. ***The data in this figure are from tests run on a Lam XL etcher, using gas flow but no plasma discharge in the reaction chamber. A gas flow including 500 sccm argon was initiated.*** Varying quantities of CF₄ gas, from 1 to 20 sccm, were introduced. . . .

Powell, col. 7, ll. 31-38. Clearly, the bolded sentences make clear that argon (i.e., the reference gas) was introduced into the Lam XL etcher (i.e., the reaction chamber). If this disclosure from the written description of Powell is not clear enough, Powell's claims make absolutely explicit that he discloses introduction of the reference gas into his reaction chamber (and not his excitation chamber):

"Claim 71. A method of obtaining a quantitative measure of an unknown flow gas having a known spectral peak, comprising: ***introducing a known flow of reference gas having a known spectral peak into a reaction chamber***; sampling gas outside a reaction chamber that has passed through the reaction chamber; exciting the sampled gas to emit radiation; detecting in real time wave bands, corresponding to the known spectral peaks of the known flow reference gas and the unknown flow gas, from the emitted radiation; and determining a quantitative measure of the unknown flow gas from of the detected wave bands.

72. The method of claim 71, wherein the reference gas is argon."

In response to this disclosure in Powell, the Examiner says the following:

“Applicants argue that the description of Fig 10 (Col. 7, lines 31-38) discloses that reference gas was introduced in the reaction chamber and not the excitation chamber. It is not understood by this how the applicant could draw this conclusion. There are many ways a test could be run to prove the essential teaching. The essential teaching being that the sample to be analyzed is mixed with the reference gas before being presented to the plasma for excitation and generation of optical spectra.

Applicant further argues that in claim 71 reference gas is introduced in a reaction chamber. [] Regarding this argument it is noted that all these claims including claim 71 are method claims and there may be many ways an apparatus could be used (methods). The fact that an apparatus is used in a certain way does not impose structural limits on the apparatus itself.

Further, nothing in this reference teaches that the reference gas could not be mixed with sample gas in the excitation chamber. It is noted here that the description of Fig 10 clearly says that during the test, there was no plasma in the reaction chamber, meaning thereby that Argon which is an inert gas would pass through the reaction chamber unaltered. Functionally this means that there is no inhibition on reference gas flowing directly to the excitation chamber.”

Office Action at 4-5. It is telling that the Examiner still cannot locate where Powell discloses an “excitation chamber 105” having “at least one reference gas input port for receiving at least one reference gas.” This is because these claim limitation is simply not disclosed in Powell in any fashion.

However, the Examiner apparently contends that it is unimportant to locate this limitation in Powell because “there are many ways a test could be run” and because “there are many ways an apparatus can be used.” But these observations are not relevant, and provide no legal basis for rejecting Applicant’s claims.

What is relevant for purpose of patentability is what Powell actually discloses (anticipation) or what Powell suggests/motivates to one of ordinary skill (obviousness). Even if Powell could have, as one of “many ways” of performing his technique, provided for “at least one

reference gas input port for receiving at least one reference gas” in his excitation chamber 105, that fact remains Powell has not. Therefore, this claim limitation is clearly not anticipated.

Moreover, as would be relevant to obviousness of this claim limitation, nowhere does the Examiner indicate any suggestion or motivation to one of ordinary skill in the art to modify Powell’s disclosure to provide “at least one reference gas input port for receiving at least one reference gas” in his excitation chamber. See MPEP 2143.03(I) (“The prior art must suggest the desirability of the claimed invention”). It is not enough in justifying obviousness to say, as the Examiner has essentially said here, that Powell *could be* modified to include this feature. See MPEP 2143.03(III) (“The mere fact that references can be . . . modified” is not enough to establish obviousness “unless the prior art also suggests the desirability” of the modification).

Nowhere has the Examiner justified, with citation to evidence, any suggestion or motivation to modify Powell to include “at least one reference gas input port for receiving at least one reference gas” in his excitation chamber. At most, the Examiner’s analysis is merely conclusory on this point, which is also an improper ground supporting a conclusion of obviousness. See MPEP 2144.03(B) (noting the importance of evidence to a conclusion of suggestion or motivation).

The Examiner’s final point is that nothing in Powell prevents the use of a reference gas in Powell’s excitation chamber 105. But this negative in no way proves the positive: i.e., that Powell does disclose or suggest the use of a reference gas in his excitation chamber. Therefore, this observation is irrelevant.

Because Powell does not disclose or suggest/motivate the claimed “plasma chamber” having “at least one reference gas input port for receiving at least one reference gas,” the

Examiner's rejection of claims 1 and 11, whether based on anticipation or obvious, continues to be improper.

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Based on the above remarks, Applicant respectfully submits that the pending claims are allowable, and requests that a Notice of Allowance issue for these claims.

Respectfully submitted,

/ TGL /

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